

**IN THE CLAIMS:**

Please write the claims to read as follows:

- 1 1. (Currently Amended) A method for initiating a peer-to-peer communication session,  
2 the method comprising:  
3 ~~Initiating~~initiating a boot process;  
4 ~~Initializing~~initializing a cluster connection manager in the booting process before  
5 a storage operating system executing on ~~the a~~ cluster partner is fully active;  
6 ~~Initiating~~initiating, by the cluster connection manager, a first remote direct  
7 memory access (RDMA) read operation directed to a cluster partner before a storage  
8 operating system executing on the cluster partner is fully active, the RDMA read  
9 operation bypassing the operating system;  
10 ~~Performing~~performing, in response to a successful first RDMA read operation, a  
11 first RDMA write operation to the cluster partner;  
12 ~~Performing~~performing, in response to a successful RDMA write operation, a  
13 second RDMA read operation directed to the cluster partner; and  
14 ~~Performing~~performing, in response to a successful second RDMA read operation,  
15 a second RDMA write operation to the cluster partner before a storage operating system  
16 executing on the cluster partner is fully active, in the booting process.
- 1 2. (Original) The method of claim 1 wherein the step of attempting a first RDMA read  
2 operation further comprises the step of issuing a RDMA read operation to the cluster  
3 partner requesting a pre-set memory address location that is associated with a status  
4 variable on the cluster partner.
- 1 3. (Previously Presented) The method of claim 1 further comprising :  
2 exchanging a set of peer connection information;  
3 passing a set of client information to the cluster partner;  
4 creating a set of appropriate communication ports;  
5 alerting the cluster partner of a ready status; and

6 alerting a set of clients that the cluster partner is in a ready state.

1 4. (Original) The method of claim 3 wherein the set of peer connection information  
2 comprises a version number.

1 5. (Currently Amended) The method of claim 4-3 wherein passing a set of client  
2 information to the cluster partner further comprises :  
3 collecting, from a set of clients, the set of client information; and  
4 transferring the collected set of client information to the cluster partner.

1 6. (Original) The method of claim 5 wherein the client information comprises a number  
2 of communication ports required.

1 7. (Original) The method of claim 5 wherein the set of client information further  
2 comprises an amount of memory requested by a particular client.

1 8. (Original) The method of claim 1 wherein the cluster partner is a storage system.

1 9. (Original) The method of claim 1 wherein the cluster partner is an application server.

1 10-14 (Cancelled)

1 15. (Currently Amended) A method comprising :

2 ~~Initiating~~initiating a boot process;

3 ~~Initializing~~initializing a cluster connection manager in the boot process before a  
4 storage operating system executing on ~~the~~a cluster partner is fully active;

5 ~~Initiating~~initiating, a peer-to-peer communication session, by a cluster connection  
6 manager, before a storage operating system executing on the cluster partner is fully active  
7 which bypasses an operating system on a storage system by attempting a first remote  
8 direct memory access read operation directed to a predefined hardware address and a

predefined port number, the predefined hardware address and the predefined port number previously known to support a RDMA operation; and

~~Performing~~performing, in the booting process, before a storage operating system executing on the cluster partner is fully active, in response to a successful initiating, a first remote direct memory access write operation directed to the predefined hardware address and the predefined port number.

16. (Currently Amended) The method of claim 15 further comprising:

~~Performing~~performing, in response to a successful first remote direct memory access write, a second remote direct memory access read operation directed to the predefined hardware address and the predefined port number.

17. (Original) The method of claim 15 wherein the predefined hardware address comprises a fibre channel identifier.

18. (Original) The method of claim 15 wherein the predefined port number comprises a virtual interface.

19. (Original) The method of claim 15 wherein the first remote direct memory access is delivered to a predefined memory address storing booting status information.

20. (Previously Presented) A system configured to establish reliable peer-to-peer communication among storage systems of a clustered environment, the system comprising:

a booting process executed by a processor;

a peer process executing on each storage system partner having an operating system; and

a cluster connection manager executing on each storage system partner, the cluster connection manager establishing a reliable peer-to-peer connection between each peer process in the booting process before a storage operating system executing on a

10 cluster partner is fully active by connecting to a predetermined port number using a  
11 predetermined network address, the reliable peer-to-peer connection bypassing the  
12 operating system and initiate a remote direct memory access (RDMA) read operation  
13 directed to a cluster partner.

1 21. (Original) The system of claim 20 wherein the reliable peer-to-peer connection is  
2 established without requiring a storage operating system executing on each storage  
3 system partner to be fully functioning.

1 22. (Original) The system of claim 20 wherein the peer-to-peer connection is a virtual  
2 interface connection.

1 23. (Original) The system of claim 20 wherein the peer process is a cluster connection  
2 client that requests services from the cluster connection manager.

1 24. (Previously Presented) A system configured to open an initial peer-to-peer connection  
2 over a cluster interconnect, the system comprising:  
3 a storage system having an operating system;  
4 a booting process executed by a processor;  
5 a cluster connection manager executing on the storage system, the cluster  
6 connection manager configured to establish a peer connection in the booting process  
7 before a storage operating system executing on a cluster partner is fully active on a  
8 predetermined port number and using a predetermined network address within the storage  
9 system the peer-to-peer connection bypassing the operating system and initiate a remote  
10 direct memory access (RDMA) read operation directed to a cluster partner ; and  
11 a process executing on the storage system, the process configured to use the  
12 established peer connection for communication.

1 25. (Previously Presented) The system of claim 24 wherein the peer-to-peer connection is  
2 a virtual interface connection.

1 26. (Previously Presented) The system of claim 24 wherein the process executing on the  
2 storage system is a cluster connection client that requests services from the cluster  
3 connection manager.

1 27. (Previously Presented) The system of claim 24 wherein the process executing on the  
2 storage system communicates with a cluster partner using the established peer  
3 connection.

1 28. (Previously Presented) A system configured to accept the initiation of a peer-to-peer  
2 connection over a cluster interconnect, the system comprising:  
3 a storage system having an operating system;  
4 a booting process executed by a processor;  
5 a cluster connection manager executing on the storage system, the cluster  
6 connection manager configured to accept a peer connection on a predetermined port  
7 number and using a predetermined network address within the storage system in the  
8 booting process before a storage operating system executing is fully active; and  
9 a process executing on the storage system, the process configured to read  
10 information from the established peer connection.

1 29. (Previously Presented) The system of claim 28 wherein the peer-to-peer connection is  
2 a virtual interface connection.

1 30. (Previously Presented) The system of claim 28 wherein the process executing on the  
2 storage system is a cluster connection client that requests services from the cluster  
3 connection manager.

1 31. (Previously Presented) The system of claim 28 wherein the process executing on the  
2 storage system reads information from a cluster partner.

32. (Previously Presented)The system of claim 28 wherein the information comprises heartbeat signals.

33-34. (Cancelled)

35. (Currently Amended) computer readable medium containing executable program instructions executed by a processor, comprising:

program instructions that initiate a booting process;

program instructions that initialize a cluster connection manager in the booting process before a storage operating system executing on ~~the a~~ cluster partner is fully active;

~~Program-program~~ instructions that initiate, in the booting process, a first remote direct memory access (RDMA) read operation before a storage operating system executing on a cluster partner is fully active;

~~program Program~~ instructions that perform, in response to a successful first RDMA read operation, a first RDMA write operation to the cluster partner;

~~program Program~~ instructions that perform, in response to a successful RDMA write operation, a second RDMA read operation directed to the cluster partner; and

~~program Program~~ instructions that perform in the booting process before a storage operating system executing on the cluster partner is fully active, in response to a successful second RDMA read operation, a second RDMA write operation to the cluster partner.